Cal/Ecotox
Toxicity Data for Song Sparrow (Melospiza melodia)*

Chemical	Tox Exposure	Endpoint Type	Endpoint Description	Endpoint Value	Note	Reference
DIAZINON	500 g active ingredient/litre	TOX-EXP IND - biomarkers	% reduction of blood serum cholinesterase compared to untreated	27% (43% SD)	a	1
DIAZINON	500 g active ingred/litre	TOX-MORT - mortality in the field	mortality of eggs and nestlings (control 21 %)	38%	b	1
DIMETHOATE	480 g active ingredient/litre	TOX-EXP IND - biomarkers	mean reduction in blood serum cholinesterase activity compared to untreated	34% (27% SD)	c	1
DIMETHOATE	average food intake 2.14 g (0.48SE)/d ; 0.24 g Dimethoate sprayed over 1 m2 seeds;	TOX-Non-Repro-Sublethal - behavioral effects		significant reduction of mean daily activity levels (perch hopping)	d	2
DIMETHOATE	0.24 g Dimethoate sprayed over 1 m2 seeds	TOX-Non-Repro-Sublethal - indirect effects	weight loss (3.4 g over experiment period; controls gained 0.43 g)	3.4	e	2
FONOFOS; TERBUFOS	6 fields treated with fonofos; 5 fields treated with terbufos (application rates were according to recommended guidelines, Ontario Ministry of Agriculture and Food)	TOX-MORT - mortality in the field	survival of banded individuals, pre- versus post-application, up to 50 days post-application	no effect	f	3
FONOFOS; TERBUFOS	6 fields treated with fonofos; 5 fields treated with terbufos (application rates were according to recommended guidelines, Ontario Ministry of Agriculture and Food)	TOX-REPRO - reproductive success	reproductive parameters (reproductive success, clutch size, number of unhatched eggs, number of young fledged/nest) of nests located on edges of sprayed fields	no effect	g	3

Notes

a NR; CANADA; NR; Species - California (R)=Melospiza melodia; TOX - Chemical=333-41-5; N=20-29 sparrows; spring; Christmas tree farms; Sherbrooke, Quebec; Tox Exp Tech=field application; Tox Exp Dur=single; Tox Study Dur=several days or weeks ; not specified; Tox Stat Sig=yes

b Embryo; Nestling; CANADA; NR; Species - California (R)=Melospiza melodia; TOX - Chemical=333-41-5; N=9 nests; spring; Sherbrooke, Quebec; Tox Exp Tech=field application; Tox Exp Dur=single; Tox Study Dur=several days or weeks/not reported; Tox Stat Sig=no

c Adult; CANADA; M; Species - California (R)=Melospiza melodia; TOX - Chemical=60-51-5; N=15-20 sparrows; spring; Christmas tree farms; Sherbrooke, Quebec; Tox Exp Tech=field application; Tox Exp Dur=single; Tox Study Dur=several days or weeks ; not specified; Tox Stat Sig=yes

d NR; Lab; CANADA; NR; Species - California (R)=Melospiza melodia; TOX - Chemical=60-51-5; N=7 treated; 7 control; Tox Exp Tech=diet; Tox Exp Dur=single; (1 seed lot0; Tox Study Dur=30 days; Tox Stat Sig=yes; recovery time from intoxication was 10 days post exposure

e NR; Lab; CANADA; NR; Species - California (R)=Melospiza melodia; TOX - Chemical=60-51-5; N=7 treated; 7 control; Tox Exp Tech=diet; Tox Exp Dur=single; (1 seed lot0; Tox Study Dur=30 days; Tox Stat Sig=yes

f Adult; CANADA; B; Species - California (R)=Melospiza melodia; TOX - Chemical=944-22-9; TOX - Chemical=013071-79-9; N=88 males, 44 females (treatment); 69 males, 27 females (control); southwestern Ontario; Tox Exp Tech=field application; Tox Exp Dur=NR; Tox Stat Sig=N

g Both Adult and Juv.; CANADA; B; Species - California (R)=Melospiza melodia; TOX - Chemical=944-22-9; TOX - Chemical=013071-79-9; N=60 treatment, 32 control nests; southwestern Ontario; Tox Exp Tech=field application; Tox Exp Dur=NR; Tox Stat Sig=N

References

1 Rondeau, Guy and Jean-Luc DesGranges. 1995. Effects of insecticide use on breeding birds in Christmas tree plantations in Quebec. Ecotoxicology. 4:281-298.

2 Brunet, Richard and Andre Cyr. 1992. The impact of dimethoate on rhythms of three granivorous bird species. Agric. Ecosyst. Environ. 41:327-336.

3 Knapton, Richard W., and Pierre Mineau. 1995. Effects of granular formulations of terbufos and fonofos applied to cornfields on mortality and reproductive success of songbirds. Ecotoxicology. 4:138-153.